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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,904	10/10/2003	Daniel Alvarez JR.	7184-PA22A	3090

21005 7590 07/21/2004

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EXAMINER

CARRILLO, BIBI SHARIDAN

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/683,904

Applicant(s)

ALVAREZ ET AL.

Examiner

Sharidan Carrillo

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Applicant is requested to update the specification to include the serial number for the related case as recited in paragraph 1 of the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, the device lacks positive antecedent basis. In claim 7, the term "nobel" is spelled incorrectly.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1746

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-4, 6-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegelman et al. (6638341) in view of Kern (Handbook of Semiconductor Wafer Cleaning, 1993, pages 88-89).

In reference to claims 1, 8, and 10, Spiegelman et al. teach preconditioning a substrate by purging with a purging gas in order to removing packing gas from the substrate within the vessel. Spiegelman et al. further teach repeating the cycle for as many times as needed in order to remove substantially all packing gas within the substrate (col. 3, lines 45-50, col. 4, lines 1-7). Spiegelman et al. teach preconditioning the substrate for subsequent decontamination of a contaminated gas which includes hydrogen, oxygen, nitrogen, air, and argon (col. 4, lines 60-65). In reference to claim 1, Spiegelman et al. teach decontaminating the contaminated gas until the concentration

Art Unit: 1746

of contaminants is on the order of 1-1000pppt (col. 8, claim 17). Spiegelman et al. do not teach the purge gas comprising water. Spiegelman et al. teach gases such as oxygen.

Kern teaches that both ultrapure nitrogen and oxygen contain contaminants such as water. It would have been obvious to a skilled artisan to have modified the method of Spiegelman et al. to include water in the purge gas since Kern teaches that ultrapure nitrogen and oxygen include small concentrations of contaminants such as water.

In reference to claims 2-4, refer to col. 5, lines 25-27. In reference to claims 6 and 7, the limitations are met since Spiegelman et al. teach repeating the purge cycle as many times as needed and further teaches gases such as nitrogen and argon.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegelman et al. (6638341) in view of Kern (Handbook of Semiconductor Wafer Cleaning Technology, 1993, pages 88-89), as applied to claims 1-4, 6-8 and 10 as described in paragraph 7 above, and further in view of Alvarez Jr. et al. (6391090).

Spiegelman et al. in view of Kern fail to teach the limitations of claim 5. Alvarez Jr. et al. teach that gases such as He, nitrogen, and oxygen has water contamination levels in the range of 10-100ppm. In view of the teachings of Alvarez, one would reasonably expect the oxygen purge gas of Spiegelman et al. to have water contamination levels in the range of 10-100ppm.

9. Claims 1-5, 8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somekh (6427703) in view of Alvarez Jr. et al. (6391090).

In reference to claims 1, 8, and 10-11, Somekh teaches purging a lithography chamber with pure oxygen gas to remove carbon contamination (Figs. 2a, 4) and removing the contamination with a vacuum pump (col. 5, lines 35-40, col. 6, lines 20-25). Somekh fails to teach purified gases having a concentration level of less than 1ppb.

Alvarez Jr. et al. teach purification of gases used in photolithography in order to reduce the contamination level to 1ppb or lower (col. 7, lines 7-10, col. 8, lines 15-17) such that molecular contaminants on the optical components of the lithography tool is reduced.

It would have been obvious to a person of ordinary skill in the art to have modified the method of Somekh to include purification of the lens gases, as taught by Alvarez such that contaminants in the optical components can be avoided.

In reference to claim 2, refer to col. 8, line 7 of Alvarez.

In reference to claims 3-4, Somekh in view of Alvarez fail to teach the specified limitations. However, it would have been within the level of the skilled artisan to reduce the contamination level in the lens gases in order to further reduce contaminants present on the optical components of the lithography equipment. In reference to claim 5, refer to col. 7, line 66 of Alvarez et al.

10. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somekh (6427703) in view of Alvarez et al. (6391090), as applied to claims 1-5, 8 and 10-11 as described in paragraph 9 above, and further in view of Van Schaik et al. (6724460).

Somekh in view of Alvarez fail to teach purging with an inert gas. Van Schaik et al. teach in-situ cleaning of optical components for use in a lithographic apparatus. In col. 4, lines 1-22, Van Scheik teach purging with nitrogen. It would have been obvious to a person of ordinary skill in the art to have modified the method of Somekh to include purging with an inert gas, since Van Schaik et al. teach it is conventional to purge with an inert gas in order to remove contaminants from the lithographic apparatus.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Somekh (6427703) in view of Alvarez et al. (6391090), as applied to claims 1-5, 8 and 10-11 as described in paragraph 9 above, and further in view of Straaijer et al. (5602683).

Somekh in view of Alvarez fail to teach the limitations of claim 9. Somekh teaches purging with oxygen but fails to teach the concentration. Straaijer et al. teach using oxygen gas having a concentration of 1 percent per volume for purposes of cleaning a lens system to remove contaminants. It would have been obvious to the skilled artisan to have modified the method of Somekh to include adjusting the concentration of oxygen as taught by Straaijer et al., for purposes of removing contaminants from the lens chamber.

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Omum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1-11 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 10/683903. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are directed to the removal of airborne contaminants from a surface and purifying a purge gas.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bonora et al. teach a method of cleaning a pod using ultrapure nitrogen. Van Schaik et al. teach a lithographic projection apparatus. Brunemeier et al. teach a plasma-flash process. Shamouilian et al. teach purging with oxygen and nitrogen gas. Brooks et al. teach cleaning articles. Mulkens et al. teach purging with nitrogen.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharidan Carrillo whose telephone number is 571-272-1297. The examiner can normally be reached on Monday-Friday, 6:00a.m-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sharidan Carrillo
Primary Examiner
Art Unit 1746

bsc



SHARIDAN CARRILLO
PRIMARY EXAMINER